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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/617,587	07/18/2000	Douglas R. Pulley	B-3970 618055-7	8643
24267	7590	11/10/2003		
CESARI AND MCKENNA, LLP 88 BLACK FALCON AVENUE BOSTON, MA 02210			EXAMINER AHN, SAM K	
			ART UNIT 2634	PAPER NUMBER

DATE MAILED: 11/10/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/617,587

Applicant(s)

PULLEY ET AL.

Examiner

Sam K Ahn

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 July 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 July 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 7.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to because figures 1 and 2 require labeling of all essential elements. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, line 24, and in claim 6, line 22, recite the limitation of *determining the assumed position*. First correlation and second correlation is calculated based on an assumed position. Moreover, "assumed position" is determined based on the first and second correlation, as recited. One element must initially be calculated beforehand to process the next. In this case, one may interpret that first and second correlation and the assumed position are calculated based on each other. How can the first and second correlation be calculated without knowing the assumed position? Isn't the beginning and end of first and second portion considered as an "assumed position"? It is unclear as to why an already known

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“assumed position” needs to be *determined*. Claim 11, in line 11, on the other hand, recite that the “assumed position” is *revised*, which clearly points out the process. The office respectfully requests further explanation.

Claims 2-5 and 7-10 directly or indirectly depend on claims 1 and 6.

3. Claim 11 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 11, lines 12-13, recites the limitation of “revising the assumed start and end position”. It is unclear and indefinite as to which start and end position it is referring to. The claim comprises first portion and second portion.

Allowable Subject Matter

4. Claims 1, 6 and 11 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action.
5. Claims 2-5 and 7-10 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.
6. The following is a statement of reasons for the indication of allowable subject matter:

Present application discloses a receiver receiving a signal comprising a first portion and a second portion where the second portion is received with the same content as the first portion

delayed by a certain amount of time. The receiver comprises correlators calculating early correlation and late correlation where the early correlation is measured between samples around the beginning of the first portion of the signal and the beginning of the second portion of the signal, while the late correlation is measured between samples around the end of the first portion of the signal and the end of the second portion of the signal. The difference of the correlations are calculated to adjust the position of start and end of first and second portion for equalizing the received signal. Closest prior art teaches, Kimura, in the same field of endeavor, a receiver comprising correlators calculating first and second portion of received signal, and further calculating the difference of the two correlations to adjust the sampling time. However, Kimura does not explicitly disclose the teaching of early and late correlations where the early correlation is measured between samples around the beginning of the first portion of the signal and the beginning of the second portion of the signal, while the late correlation is measured between samples around the end of the first portion of the signal and the end of the second portion of the signal. Therefore, prior art does not teach all the limitations.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Stott et al. ('730) and Merkle et al. ('866) teach correlation in the DVB-T field.

Helard et al. ('744) teach correlation of received signal with the delayed version of the received signal.

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Hardcastle et al. ('025) teach receiver comprising plurality of autocorrelation values with received signal delays.

Pon ('927) teaches a receiver comprising early and late correlations.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Sam Ahn** whose telephone number is **(703) 305-0754**.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Stephen Chin**, can be reached at **(703) 305-4714**.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

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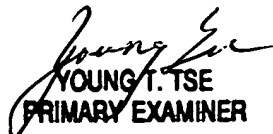
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or faxed to:

(703) 872-9306

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA., Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.


YOUNG T. TSE
PRIMARY EXAMINER

Sam K. Ahn
10/21/03